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Can Self-determination Theory be Used to Increase College Student Retention?

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Abstract

This paper first introduces self-determination theory (SDT) to retention researchers and higher education professionals. Highlighted are the three basic psychological needs, that when met, are theorized to give rise to intrinsic motivation, which is associated with high levels of human performance. These are the needs for autonomy, competence, and relatedness. This theoretical overview is followed by a discussion of how this theory has been applied to understand the role of intrinsic motivation in fostering educational success. An outline of how SDT can be applied to increase college student retention is presented. The second part of the paper applies the understanding of self-determination theory to interpret and better understand the results of a focused literature review of 12 retention research articles. This interpretation suggests that meeting or failing to meet the psychological needs for autonomy, competence, and relatedness proposed by SDT may explain the results of research reviewed. It is theorized that college environments that meet all three psychological needs postulated by SDT will increase student retention beyond what prior approaches have achieved.

Keywords: college student retention, motivation, self-determination theory

For over 40 years, theories of academic and social integration have been used to study college student retention (e.g. Astin, 1984; Bean, 1980, 1983; Braxton, Hirschy, & McClendon, 2004; Tinto, 1975, 1993). Other researchers (e.g., Cambridge-Williams, Winsler, Kitsantas, & Bernard, 2013; Hong, Shull, & Haefner, 2011; Rogerson & Poock, 2013) have explored college student retention from the perspective of Bandura's (1977) notion of self-efficacy. The first part of this article introduces self-determination theory (SDT) to retention researchers and practitioners. After a brief introduction of SDT and its application in educational settings, an outline of how the theory can be applied to the study of college student retention is presented. The second part of the paper reviews 12 retention research articles by overlaying an SDT lens. Taken together, this paper proposes that SDT can help practitioners and researchers extend existing theory and research by using SDT as a comprehensive framework for studying and fostering college student retention and success.

Self-determination Theory: An Overview

Proponents of self-determination theory (SDT) suggest a motivational continuum ranging from externally regulated behaviors to those behaviors that are internally driven and thus are experienced as self-directed. This theory asserts that intrinsic motivation (the drive to engage in activity for its own sake and not an external reward) is maintained by satisfaction of three basic psychological needs: the need for autonomy, the need for competence, and the need for relatedness (Deci & Ryan, 1985; Niemiec & Ryan, 2009). The need for autonomy is met when a person perceives his or her behavior as volitional or self-endorsed (Deci & Ryan, 1985; Niemiec & Ryan, 2009). The need for competence is met when a person feels capable of success when challenged with a specific performance request (Deci & Ryan, 1985; Niemiec & Ryan, 2009). The need for relatedness is met when a person interacts with and develops emotional regard for other people ((Deci & Ryan, 1985; Deci & Vansteenkiste, 2004, p. 25; Niemiec & Ryan, 2009). Feelings of autonomy, competence, and relatedness are thus theorized to be the basis for creating intrinsic motivation. Proponents of SDT maintain that students who experience intrinsic motivation tend to exhibit higher levels of academic performance than extrinsically motivated peers (e.g., Sarrazin, Tessier, Pelletier, Trouilloud, & Chanal, 2006; Ryan & Deci, 2009).

Intrinsic motivation is better understood when contrasted with extrinsic motivation, that is, behavior enacted to attain some outcome separate from the activity itself (Niemiec & Ryan, 2009; Ryan & Deci, 2000). According to SDT, there are four distinct forms of extrinsic

motivation that vary in the degree to which a behavior is experienced as internally directed (Niemiec & Ryan, 2009). Integrated regulation is the most autonomous type of extrinsic motivation. It occurs when a person identifies with external regulations, when these have been synthesized with other aspects of the self. Identified regulation is the second regulatory style that is postulated to be somewhat internal (Niemiec & Ryan, 2009). It refers to behaviors that are enacted because the person considers them valuable or important, but the behaviors have not been internalized. Because integrated and identified regulation facilitate internalization and integration of external regulations these forms of regulation can become self-determined over time (Deci, Ryan, & Williams, 1996; Ryan & Deci, 2000). The third level on the motivation continuum is somewhat external. Introjected regulation refers to behaviors that are externally driven, but enacted to satisfy internal contingencies (e.g., the avoidance of self-derogation). The least autonomous, but most common, type of extrinsic motivation is external regulation and includes behaviors that are enacted to obtain a reward or avoid a punishment. These externally regulated behaviors are difficult to continue once the controlling contingencies are removed (Niemiec & Ryan, 2009; Ryan & Deci, 2000).

The Role of Basic Psychological Needs in Education

Research on SDT has suggested that educational contexts that support the satisfaction of the need for autonomy, competence, and relatedness fosters students' intrinsic motivation and academic success (Sarrazin et al., 2006). Satisfying the three basic needs "enhance intrinsic motivation, internalization, and engagement, yielding enhanced emotional well-being and cognitive growth" (Ryan & Deci, 2009, p. 191). Over three decades ago, Deci and Ryan (1985) reported that extrinsically motivated learning, such as working to obtain a higher grade impaired conceptual learning, whereas the creation of contexts that support intrinsic motivation contributed to conceptual learning. Deci, Vallerand, Pelletier, and Ryan (1991) reviewed research on self-determined motivation and educational outcomes, concluding that students who were found to have more self-determined motivation to do academic work were more likely to stay in school; positive academic performance was also linked to intrinsic motivation and autonomous forms of extrinsic motivation. More recent research has supported these earlier findings and furthered development of theory (Guay, Ratelle, & Chanal, 2008; Ryan & Deci, 2013; Taylor et al., 2014).

Much of the SDT education-related research has focused on autonomy and creating autonomy supportive environments. Guay and Vallerand (1997) demonstrated a positive relationship between autonomy support from teachers and students' perceived academic competence and autonomy. A positive relationship between students' perceived academic competence and autonomy and self-determined school motivation was also demonstrated (Guay & Vallerand, 1997). Deci et al. (1996) concluded that autonomy supportive learning contexts had four main components: considering student perspective, providing choice, encouraging self-initiation, and minimizing the use of controlling language and events. This type of learning context, they found, led to more interest and enhanced conceptual learning (also see Ryan & Deci, 2013). Specific attention has also been given to competence. A competence-supportive learning environment was defined as one that provides optimal challenge for a student's skill level, where activities that are too easy might be boring and activities considered by students to be too difficult might provoke anxiety and reduce effort (Niemic & Ryan, 2009; Ryan & Deci, 2013).

The need for relatedness has received less attention from SDT researchers. Nonetheless, relatedness has been likened to classroom environments where students felt that the instructor respected and valued them (Niemic & Ryan, 2009; Ryan & Deci, 2013).

While much of this research was conducted in secondary education settings (e.g. Fortier, Vallerand, & Guay, 1995; Guay & Vallerand, 1997; Reeve & Jang, 2006; Reeve, Jang, Carrell, Jeon, & Barch, 2004), the manner in which SDT informed instruction may be readily applicable to higher education settings.

Fostering Intrinsic Motivation on Campus

A careful application of this knowledge to higher education contexts may help improve student retention efforts. It is proposed here that all three basic psychological needs should be satisfied within each classroom and within the college environment as a whole.

Relative to the high school setting, college environments tend to be more autonomy supportive (Ratelle, Guay, Vallerand, Larose, & Senécal, 2007). Yet, conditions that meet the need for autonomy should be continuously fostered. Higher education organizations can increase autonomy support by creating environments that offer meaningful choices in and outside of the classroom; conversely, programs and initiatives that restrict choice and limit experienced autonomy should be scrutinized.

Autonomy support can be fostered in several ways (Reeve, Nix, & Hamm, 2003). These include: (a) the use of intrinsic goal framing (e.g., helping a student to focus on the inherent value of an activity, and not external rewards such as grades) and connecting the goal realistically and meaningfully to the activity (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Vansteenkiste, Simons, Lens, et al., 2004; Vansteenkiste, Timmermans, Lens, Soenens, & Van den Broeck, 2008); (b) offering encouragement; (c) allowing students to select their own method of work; (d) providing space and time for students to make decisions; and (e) avoiding controlling questions and statements (Reeve & Jang, 2006). These autonomy supportive conditions may be used to facilitate activities within and outside of the classroom and in turn contribute to increasing student levels of intrinsic motivation.

To better understand how the need for competence might be satisfied within a college setting, it is again important to distinguish between the challenges that students experience in their courses from the challenges they face in mastering the college environment. Students need

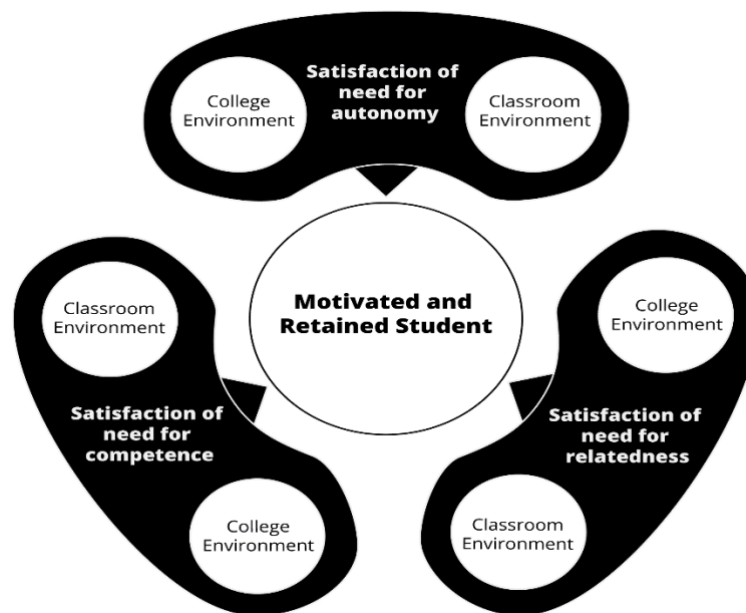


Figure 1. A graphical representation of how the three basic psychological needs proposed by self-determination theory need to be supported in classrooms and throughout a college campus to foster student intrinsic motivation and success.

to experience being competent in their classrooms and on their campuses for this need to be fully met. Thus, students may be more likely to be retained if they experience both academic and

social competence. These concepts are related to existing retention models that are examined later.

The need for relatedness must be satisfied within the college environment as well as in and outside of the classroom. For instance, within the classroom relatedness is associated with students feeling that the instructor respects them and cares about their success. Students that feel respected, valued, and connected experience a sense of belonging (Niemic & Ryan, 2009). This need can be satisfied outside of the classroom by social integration with peers through building friendships and taking advantage of supportive services (e.g. advising, career services, learning communities, student organizations, etc.). The similarity between the SDT notion of relatedness and existing retention models focus on social integration are discussed in the next section. This model is shown in Figure 1.

Using Self-determination Theory to Review Retention Research

This section provides a literature review of retention research articles and utilize this model to understand the results. Based on the SDT lens for retention, we have developed four propositions to guide the review of retention literature.

Propositions to guide the review. First, retention initiatives will be more effective if offered throughout the college environment and in each classroom setting. This requires creating institutional cultures that understand and work to satisfy students' basic psychological needs for autonomy, competence, and relatedness, placing value on intrinsic forms of motivation.

Second, based on theories of social integration and self-efficacy, the need for autonomy will be a far less common feature of retention programs. Our review of literature explores the effects of the trend to introduce more restrictions and controls, especially for those students identified as at risk of academic failure (e.g., intrusive advising, mandatory participation in specific programs). Retention efforts may show more robust and consistent results across campuses if the need for autonomy was supported.

The third related proposition emphasizes that supporting autonomy should not be confused with a lack of structure; instead, the degree to which retention programs include real, meaningful choices for students will be examined. Self-determination theory suggests autonomy supports the need to be meaningfully connected to students' assessed competencies, both academic and social, including student ability to navigate college life. Students are more likely to

be connected to and be motivated by the college experience when they have a developmentally appropriate role in choosing and enacting their path to graduation.

The final proposition is that the notion of competency as articulated within the SDT literature is a related, but more robust psychological construct than self-efficacy, which tends to minimize the relationship between a student's belief in their capacities and the reinforcing tendencies of successfully accomplishing a valued task. The review explores the self-efficacy construct and its relationship to the emotional aspects of motivation associated with both autonomy and relatedness as proposed by SDT. We assert that as a stand-alone framework, self-efficacy does not capture the cognitive, social, and emotional aspects of motivation posited by SDT theory as conjointly related to academic success. Promoting self-efficacy absent real choice and a sense of belonging may prove to have limited effect. The understanding of competence utilizing an SDT may provide a richer framework for the development of programs aiming to support students who come to college academically and socially under-prepared precisely because it can be theorized that competence emerges in dynamic relation to the existence of meaningful choice and relationships.

The literature reviewed. The retention-related articles reviewed for this study explored: summer bridge programs that exposed students to the pace of college life or summer learning communities organized by academic major or other first-year learning community experiences; first year seminars organized by academic major, common advisor, or focused on peer interactions and academic and non-academic service utilization; and programs for students on academic probation or for students on academic suspension. Other articles focused on topics related to the effect of faculty on student retention, specifically, the effect of perception of faculty on student outcomes, including: the effects of coursework taught by part-time faculty on student retention, the frequency of student-faculty interactions, and the effect of faculty emotional intelligence on student's intent to stay at the institution.

While these studies were not explicitly framed by the SDT understanding of the need to satisfy autonomy, competence, and relatedness as a condition for generating intrinsically motivated learners, these studies offered in varying degrees examples of retention efforts that demonstrated the value and applicability of SDT to retention research. Taken together, the studies examined support the claim that SDT may be a comprehensive model for understanding and fostering student retention.

Table 1

Literature Reviewed Through the Lens of Self-Determination Theory

Authors	Study Focus	Basic Psychological Needs Met		
		Autonomy	Competence	Relatedness
Andrade (2007)	Learning communities	X		
Wang and Pilarzyk (2009)	Suspended students	X	X	
Allen and Bir (2011)	Summer bridge learning community	X	X	X
Hanger, Goldenson, Weinberg, Schmitz-Sciborski, and Monzon (2011)	Program for students on academic probation	X	X	X
Cambridge-Williams, Winsler, Kitsantas, and Bernard (2013)	Freshman Year Seminar (FYS); FYS as part of a living-learning community		X	X
Rogerson and Poock (2013)	FYS connected to student advisor or major		X	X
Authors Lifton, Cohen, and Schlesinger (2007)	Study Focus FYS linked to course from student's major	Autonomy	Competence X	Relatedness X
Wischusen, Wischusen, and Pomarico (2010)	Pre-freshman program for students within a specific major		X	X
Dill, Gilbert, Hill, Minchew, and Sempier (2010)	Program for students on academic probation		X	X
Hong, Shull, and Haefner (2011)	Perception of faculty on student outcomes		X	X
Jaeger and Hinz (2008)	Part-time faculty instruction			X
Lillis (2011)	Frequency of student-faculty interaction			X

This study uses SDT as a lens to interpret the results of a literature review of 12 retention research articles (see Table 1). Studies that examined early warning systems or relationships

between student characteristics and college success were excluded (e.g., Campbell & Mislevy, 2013; D'Allegro & Kerns, 2011; Jones & Braxton, 2010; Ma & Cragg, 2013; Tampke, 2013; Whalen, Saunders, & Shelley, 2010), as were studies with small samples, qualitative studies, and studies that focused solely on community colleges were not considered (e.g., Arcand & Leblanc, 2011; Barnes & Piland, 2010; Ward & Commander, 2012; Wathington, Pretlow, & Mitchell, 2011). Initial results from a search of the ERIC database revealed that most studies that focused on programs and/or student-faculty interaction that institutions implemented to foster student retention were published in the *Journal of College Student Retention*. The studies were published whether they explicitly relied on an existing theoretical framework. Articles appearing between 2007-2013 that reported some positive effects of retention programs or student-faculty interaction were selected.

Overlaying the SDT lens on the dominant retention traditions. Two major traditions have dominated retention research. The first consists of theories of academic and social integration (e.g. Astin, 1984; Bean, 1980, 1983; Braxton et al., 2004; Tinto, 1975, 1993). The second tradition examines college student retention from the perspective of Bandura's (1977) notion of self-efficacy.

For this review, academic and social integration was analyzed as analogous to the third basic psychological need comprising SDT, relatedness. Tinto (1975) argued decades ago for the sociological importance of academic integration. When students identified with the beliefs, values, and norms inherent in the academic system, it was proposed they would be more successful. "Tinto postulates that academic and social integration influence a student's subsequent commitments to the institution and to the goal of college graduation" (Braxton et al., 2004, p. 9). Relatedness for SDT refers to a person's tendency to internalize the values and practices of those to whom they feel connected. When they feel respected, valued, and connected, students experienced a sense of belonging, satisfying the need for relatedness, and facilitating the process of internalization of external regulators of behavior (Niemic & Ryan, 2009; Ryan & Deci, 2013). Studies that are based on academic and social integration were examined as providing support for satisfaction of the need for relatedness. It is important to note that Tinto's model is normative and premised on Durkheim's normative and functionalist sociological analysis (Tinto, 1975). Self-determination theory is psychologically oriented and focused on creating the conditions for self-determined action. While it recognizes the importance

of social norms and values, it draws attention to the way they might become integrated with a person's sense of self, and how the manner of that integration is related to motivational states (Ryan & Deci, 2013).

Studies based on Bandura's (1977) self-efficacy were viewed as supporting what SDT identified as the need for competence. Self-efficacy is "the level of belief one has in his or her capabilities in completing a task successfully" (Cambridge-Williams et al., 2013, p. 248). The need for competence in SDT refers to a person feeling competent to meet the challenge of the activity and the experience of effectively enacted behavior (Niemic & Ryan, 2009). While self-efficacy focuses on belief (cognition), SDT understands competence as feeling able (emotion) to accomplish a task based on experience and support (Deci & Ryan, 1985; Ryan & Deci, 2013). Research on self-efficacy can be used to build a case for the satisfaction of the need for competence.

It is the first psychological need in SDT (the need for autonomy) that has no clear parallel in current retention programs. Table 1 indicates the relative lack of emphasis on autonomy in current retention research. This review argues that the degree of choice available to students did not appear as a conscious or tested variable but was nonetheless a discernable feature of the given program or research design. From the standpoint of SDT, the absence of autonomy from many retention efforts may explain why the results of studies based only on academic and social integration or self-efficacy have produced mixed results (Andrade, 2007; Cambridge-Williams et al., 2013; Rogerson & Poock, 2013).

Satisfying the needs for relatedness and competence may not be enough to consistently create the conditions for intrinsic motivation and thus student persistence and graduation. It is important to emphasize that all three basic psychological needs must be satisfied in order to increase intrinsic motivation or foster internalization of external goals. To build the case for this hypothesis, studies were examined according to which of the three basic psychological needs they met and how SDT could help educators better understand both retention research and trends in student success.

Studies that Demonstrated All Three Basic Psychological Needs

Allen and Bir (2011). This study developed a model to study the effect of a summer bridge learning community program based on a combination of models by Tinto (1975; 1993) and Bean (1980; 1983). Participation in the program was voluntary. The program was a fully

residential experience that focused on developing student engagement (Allen & Bir, 2011). It aimed to support student preparation and offered a chance to earn up to eight credits before their first year of college. Allen and Bir's (2011) learning communities consisted of roughly 20 students; classes, tutoring sessions, programs, and workshops focusing on character and ethics, health and wellness, and goal setting were offered. Of the variables, only the parents' level of education had a statistically significant effect on the program participants' GPAs (Allen & Bir, 2011). Pre-college academic ability influenced academic performance for all students regardless of program participation. However, students who participated in the summer program had higher cumulative GPAs and returned at greater rates for the second year (Allen & Bir, 2011). The summer program was linked to academic confidence, "a form of self-efficacy, [which was] found to make a difference. Those with elevated confidence levels in their reading ability also had significantly higher first year college cumulative GPAs" (Allen & Bir, 2011, p. 543).

Autonomy was satisfied by having an option to participate in the summer program; competence was satisfied by increased levels of academic confidence, and indirectly through increasing participants' understanding of the college environment (Allen & Bir, 2011). The need for relatedness was satisfied for both peers and faculty via their participation in learning communities.

Hanger, Goldenson, Weinberg, Schmitz-Sciborski, and Monzon (2011). They studied the effectiveness of a semester-long voluntary course for students on academic probation. The program was developed based on Tinto's (1977) social integration model, resiliency theory, and positive psychology. The program focused on student strengths, encouraged an optimistic yet realistic perspective, and highlighted areas of resiliency that students already evidenced (Hanger et al., 2011). This was done with the aim of fostering further resilience, increasing emotional wellbeing, and ultimately enhancing academic performance and retention. It was designed to educate and better orient students about institutional expectations and policies and to help develop their academic identities (Hanger et al., 2011, p. 211).

Course participants performed significantly better, yielding higher GPAs than participants who did not complete the course or those who did not participate (Hanger et al., 2011, p. 211). Course participants sustained higher GPAs over time and had the highest rate (58%) of returning to good academic standing compared to the other two groups (29.8% for non-participants and 27% for course non-completers). Course participants had higher enrollment

persistence (78%) compared to the other two groups (43% non-participants and 46% for course non-completers, Hanger et al., 2011).

Autonomy in this study was supported by voluntary participation in the course. The need for competences was supported with a focus on positive outcomes such as “a belief in self-efficacy and the potential for change and positive outcomes” (Hanger et al., 2011, p. 210). Relatedness was developed by implementing elements of academic and social integration, with relatedness supported by participants being valued by faculty and working with students who were in a similar position, creating a sense of belonging. This course satisfied all three basic psychological needs.

Studies that Demonstrated Basic Psychological Need for Autonomy

Andrade (2007). When examined through the lens of SDT, the importance of autonomy was evident in Andrade’s (2007) review of 12 studies that focused on the effect of learning communities (LC) on college student retention. The one study that selected LC participants randomly (i.e., offered no choice) did not demonstrate “gains in either persistence or academic achievement although participants gave it strong reviews for involvement and satisfaction” (Andrade, 2007, p. 13). Studies that offered voluntary participation showed at least some gains in student retention. While these later results may be explained in terms of selection bias, it is also possible that choice itself acted as an independent or mediator variable (see Baron & Kenny, 1986).

Wang and Pilarzyk (2009). They studied the effect of three retention initiatives for suspended students. Students on probation were able to choose from one of three programs. One eight-week program was very rigorous and included basic-skills training (reading and math), a focus on time management, and mandatory meetings with a mentor. Successful completion required one grade level increase on the Test of Adult Basic Education and 100% attendance (Wang & Pilarzyk, 2009). The second program was less rigorous and consisted of one three-hour workshop that focused on awareness of academic success standards. The third option was the least rigorous and it required students to read research and create an action plan during their own time and submit it for their appeals (Wang & Pilarzyk, 2009). Participating in the first program guaranteed that student’s appeals would be automatically approved, with a very high probability of having their financial aid reinstated. Interestingly, all programs had a positive effect on student academic performance. There were no significant differences in course completion rates

and post-intervention term GPAs between program type (Wang & Pilarzyk, 2009). While the intent of their study was to explore which method of intervention would be most effective in promoting student success, when examined through the lens of SDT the initiative promoted autonomy by offering students a choice in how they could respond to their suspension. While it is indicated in Table 1 that the program Wang and Pilarzyk studied met the basic psychological need for competence, we did not believe that competence was as significant as autonomy; hence discussion of this study focused only on the manner in which the program met the need for autonomy of students on probation.

Studies that Demonstrated Basic Psychological Needs for Competence and Relatedness

This next section focused on evidence that the needs for competence and relatedness were satisfied. The nature of student participation in these studies was unclear on whether students were provided choice. Absence of this detail highlights the limited attention researchers and practitioners give to offering choice as a potentially important aspect of retention program development.

Rogerson and Pooch (2013). They found that the freshman year seminars/first year seminars (FYS) were considered the most used retention tool. Although all FYS have regularly scheduled meeting times and consistent instructors . . . they vary somewhat regarding frequency of meeting times, content, pedagogy, credit hours, and whether [they are] required or elective. These differences suggest no particular attribute singularly ensures the success of the seminar as a retention tool. (Rogerson & Pooch, 2013, p. 159) Since a majority of recent FYS studies apply some type of academic, social integration, and/or self-efficacy model, we considered FYS as tools to increase student competence with respect to navigating the college environment, and as fostering student relatedness by contributing to a sense of belonging in the college community.

Cambridge-Williams et al. (2013). In a wide-ranging study spanning over seven years, Cambridge-Williams et al. (2013) used Bandura's (1977) theory to study the effect of first-semester college students' participation in FYS on retention. The study examined a range of variables in relationship to retention, including: (a) high school performance and demographics; (b) self-efficacy and self-regulated learning; (c) services used; (d) satisfaction with the university; (e) peer learning and help seeking; and (f) FYS within living-learning communities (LLC). There was no initial demographic (e.g., family income) or academic differences (e.g.,

SAT score) between the students that participated in the FYS and those who did not (Cambridge-Williams et al., 2013).

Significant differences between the FYS participants and non-participants in retention were observed. Nearly 90% of the FYS participants returned for the start of their sophomore year, while only 78% of non-participants returned (Cambridge-Williams et al., 2013). This trend was observed two years later (Cambridge-Williams et al., 2013, p. 255). After five years, 75% of the students who took the FYS were still enrolled or graduated, compared to nearly 60% of students who were not enrolled in FYS (Cambridge-Williams et al., 2013).

For 7-year graduation, logistic regression analyses confirmed significant differences in the likelihood of graduating for those who were enrolled in the [FYS] course and those who were not. The odds of graduating were almost 50% less if one were not enrolled in [FYS] during the freshman year. (Cambridge-Williams et al., 2013, p. 263)

There was no difference in cumulative GPA between the participants and non-participants. Self-reports indicated that students who participated in the FYS planned to use more academic- and non-academic services (Cambridge-Williams et al., 2013).

Cambridge-Williams et al. (2013) also studied the difference between FYS participants and FYS students who also participated in a living-learning community (LLC). Significant difference in graduation rates between students in the LLC sections and those only in the FYS were observed. Nearly 90% of LLC students graduated within 7 years, while 63% of FYS-only students graduated in that timeframe (Cambridge-Williams et al., 2013, p. 257). This suggested that LLC offered an environment that supported satisfaction of competence and relatedness more than a FYS environment alone.

Overall, the Cambridge-Williams et al. (2013) study suggested that participation in a FYS that satisfy students' need for competence and relatedness in both the course and college environment lead to greater retention and graduation rates.

Rogerson and Pooch (2013). Using Tinto's (1975) theory as a guide, Rogerson and Pooch (2013) compared the effectiveness of FYS with different enrollment criteria: FYS students had the same intended major or area of study; FYS students shared the same advisor; FYS students had the same intended major or area of study and shared the same advisor; and FYS students were drawn from a range of majors and advisors. Sections that were populated by specific groups such as athletes, first-generation students, transfer students, etc., were not

included in the study. Students who participated in the four distinct FYS were asked to complete a survey the following semester (Rogerson & Poock, 2013).

The authors reported that sections populated by students with the same major and same major advisor saw knowledge of academic policies and procedures as more beneficial than FYS with students from different majors and with different advisors (Rogerson & Poock, 2013). Students in sections populated by major area of study viewed major or career information and exploration as a more beneficial when compared to students in sections not connected to a major or advisor. Students who attended the FYS returned at greater rates than those who did not participate in the FYS. Students in FYS that were connected to majors or advisors were retained at 83%, a greater rate than 76% for students in FYS that were not connected to a major or advisor (Rogerson & Poock, 2013).

The authors concluded that their “study supports Tinto’s theory as it suggests that populating the first year seminar by major or advisor/major enhances opportunities for students to establish connections with peers as well as faculty members, thus perpetuating the sense of belonging and connection” (Rogerson & Poock, 2013, p. 167). This can be understood through the lens of self-determination theory. Increasing student knowledge about the specific major and creating an environment where students can feel comfortable in the classroom and college environment may satisfy student needs for competence and relatedness.

Lifton, Cohen, and Schlesinger (2007). They studied the effect of a FYS linked to student major. Freshman students who declared Business as their major were co-registered in both Introduction to Business and a FYS that had curricular linkage between the courses or assigned to a control group. For the treatment groups “the seminar syllabus dealt with note-taking skills, the linked sections focused on applying the discussed techniques to students’ notes for two specific lectures of Introduction to Business” (Lifton et al., 2007, p. 116). The control group also took two courses but without the linkage between them. Both groups had similar distribution of gender and SAT scores. Both instructors attended a three-day training, used the same textbook and received similar end of the semester course evaluation results. Participants average grade in the linked sections was 75 compared to an average grade of 71 in the unlinked sections (Lifton et al., 2007). This affected the difference in students’ first semester GPAs (B vs. B-) and first-semester students who ended up on academic probation came from unlinked sections (Lifton et al., 2007).

Lifton et al. (2007) then reported that there was a statistically significant difference in retention rates to sophomore year. Twelve percent of students who participated in the linked sections did not return compared to 29% of students who participated in the FYS without the linkage to the business course. Persistence to graduation was also higher for the students who participated in the linked courses (61% vs. 46%) (Lifton et al., 2007).

The Rogerson and Pooch (2013) and Lifton et al. (2007) studies are excellent examples of FYS that were successful in retaining students. While varying in important ways, we believe that each type of freshman seminar assists in satisfying student need for competence and relatedness. We next review other programs and services that were examples of assisting students in satisfying their need for competence and relatedness.

Wischusen, Wischusen, and Pomarico (2010). This research studied the effect of a pre-freshman program for students within a specific major. The “program was designed to give participating students a realistic look at the pace of college life. Students were presented seven lectures (11 hours) from the first weeks of an introductory biology course, along with three exams on the material” (Wischusen et al., 2010, p. 434). Students who participated in the program “were on-track to graduate in significantly higher percentages than students in the control group at the end of each of the first four semesters,” (Wischusen et al., 2010, p. 434). The retention rate in the specific major was significantly higher for the students who participated in the pre-freshman program. Within a one-year cohort, 77% of participants were retained within the major, compared to only 56% retention of students who did not participate in the program (Wischusen et al., 2010).

Dill, Gilbert, Hill, Minchew, and Sempier (2010). Although they did not base their study within a theoretical framework, they reported the outcomes of a program for students placed on academic suspension. Suspended students could register for no more than 14 hours and were required to participate in advising sessions and a three-hour course that addressed common circumstances that often present challenges to suspended students (work, family, social issues). Students who participated in the program were retained more than double their non-participant peers (Dill et al., 2010).

The results from these studies suggest that specific retention programs such as LC (e.g. Allen & Bir, 2011; Andrade, 2007), first year seminar (e.g. Cambridge-Williams et al., 2013; Lifton et al., 2007; Rogerson & Pooch, 2013), pre-freshman programs (e.g. Wischusen et al.,

2010), academic probation (Hanger et al., 2011) and academic suspension (e.g. Dill et al., 2010) addressed students' needs for competence and relatedness for both academic and social contexts of the college as a whole, leading to increased retention.

Up to now, the studies reviewed examined programs that satisfied students' needs for competence and relatedness. Studies examining the role of faculty in satisfying these two needs were also reviewed.

Hong et al. (2011). This group surveyed students to study the effect of perception of faculty on student outcomes. They found a positive and statistically significant relationship between perceived faculty caring dispositions (e.g., responsiveness, student treatment) and perceived positive outcomes (e.g., self-efficacy, persistence). The study did not distinguish between faculty type, but it appeared to support the satisfaction of the need for competence and relatedness.

Jaeger and Hinz (2008). They studied the effects of having part-time faculty teaching on student retention. Using existing data (e.g., high school transcripts, first year course and instructor data) they tracked students by type of instructor. In addition to the impact of student characteristics such as gender and high school GPA, Jaeger and Hinz (2008) found that increased exposure to classes taught by part-time instructors decreased the odds of being retained. Specifically, "the result shows that the number of hours taken by a first-year student from a part-time faculty member is a factor in student retention" (Jaeger & Hinz, 2008, p. 280). Possible explanations for these results were offered. Full-time faculty might be on campus more often and therefore more accessible to students leading to stronger relationships, which might have increased students' feeling of belonging and satisfaction of the need for relatedness (Jaeger & Hinz, 2008).

Lillis (2011). He studied the association between the frequency of student-faculty interactions and the effect of faculty emotional intelligence (EI) on student's intent to stay at the institution. Participants were randomly assigned to a faculty mentor and were required to meet at least once during the semester. Students who experienced higher frequency of interaction with the faculty were significantly more likely to stay at the institution (Lillis, 2011). When the level of interaction was low, the faculty mentor's EI had a significant positive effect on a student's intentions to stay enrolled. When the level of interaction was high, EI appeared to have a limited effect (Lillis, 2011). These results suggest that the more frequent the interaction between student

and faculty, the more likely the student will be retained regardless of the faculty's level of EI. If the frequency of interaction with the student is low, the level of faculty EI becomes important (Lillis, 2011). If the faculty has high EI, especially in terms of competency related to working with others, the student would also be more likely to re-enroll.

These studies offered additional support for the proposed model based on SDT. Based on these studies we propose that advisors and faculty can facilitate student retention by satisfying the three basic psychological needs, especially through regular, meaningful contact with students. Characteristics of faculty, such as their employment status (full-time or adjunct) or level of faculty EI, are likely to play a secondary role in retention.

Conclusion

The goal of this paper was to provide an understanding of SDT, to review current retention research with an SDT lens, and to encourage a scholarly conversation about the applicability of SDT as a guide to increase student retention. Viewed through the lens of SDT, the review of research provides initial support for our proposition that creating institutional cultures that understand and work to satisfy students' basic psychological needs for autonomy, competence, and relatedness, placing value on intrinsic forms of motivation, may deepen the field's understanding of retention initiative outcomes.

Importantly, this review highlighted that the need for autonomy appears to be the least understood, and presumably as a result of this, a far less common feature of existing retention programs. Autonomy support needs to be meaningfully connected to students' assessed competencies, both academic and social, including student ability to navigate college life. Our review does suggest that students are more likely to be connected to and be motivated by the college experience when they have a role in choosing their path to graduation. As a stand-alone framework, self-efficacy does not capture the cognitive, social, and emotional aspects of motivation posited by SDT as conjointly related to academic success. Taken together, the studies examined support our claim that SDT may be a comprehensive model for understanding and fostering student retention, and we encourage student affairs professionals to discuss, apply, and research our proposition that SDT can be used to improving student retention and success.

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